

REMARKS

In view of the foregoing Amendments and following remarks responsive to the Office Action of May 24, 2004, Applicant respectfully requests favorable reconsideration of this application.

Applicant has herein amended the claims to conform better to United States claim drafting conventions. Applicant also has added new method Claims 19 through 24 to claim further disclosed aspects of the present invention.

The Office has rejected Claims 1, 3-7, 9, and 14-18 under 35 U.S. C. §102(e) as being anticipated by Kim. The Office has rejected Claims 2 and 8 under 35 U.S.C. §103 as being unpatentable over Kim.

Finally, the Office has rejected Claims 10-13 under 35 U.S.C. §103 as being unpatentable over Kim in view of Van Schyndl.

Applicant respectfully traverses all prior art rejections.

The Present Invention

The present invention relates to methods and apparatus for selectively routing the audio between the headset or the handset of a mobile transceiver, such as a cellular phone, in a manner that is extremely easy, convenient, and intuitive for the user of the transceiver. Particularly, one of the problems in the prior art addressed by the present invention is the fact that a cellular telephone user often may have the telephone in his or her pocket with the headset connected to the handset. Existing cellular telephones are designed to automatically route the audio to the headset when the jack of the headset is connected to the jack receptacle of the handset. When an incoming call is received, there is a very limited amount of time to answer the call, which the user may wish to answer by using the handset as opposed to the headset (for instance, because the user does not have enough time to unwrap the headset from the handset and place it on his or her head within the limited time available for answering the call). Yet it may be difficult to disconnect the headset jack within that time because the headset wire is wrapped around the handset. Alternately, the user may not realize that the headset is plugged in and may attempt

to talk on the telephone using the speaker and microphone of the handset, only to discover that the speaker and microphone on the handset are disabled because the headset is plugged in. This is a less than optimal design.

The present invention solves this problem. In accordance with the first embodiment of the invention, first and second switches are provided on the handset and headset, respectively. Operation of the switch on the handset initiates (or accepts) the call (i.e., takes the phone "off-hook") and automatically routes the call on a first audio path that is connected to the microphone and speaker of the handset. If, on the other hand, the user operates the second switch on the headset, the phone is taken "off-hook" and simultaneously the call is routed on a second audio path to the microphone and speaker of the headset. Accordingly, the audio path is selected by the user's choice of which switch to operate and is not dictated to the user merely by the fact that the headset is connected to the handset.

In another embodiment of the invention, two switches again are provided. However, in this embodiment, one switch initiates (or accepts) a call and another switch toggles between the audio path on the handset and the audio path on the headset. Again, the user can easily select between the audio path in the handset and the audio path in the headset and the path is not dictated to the user merely by whether or not the headset is connected to the handset.

In yet another embodiment of the invention, first and/or second switches are provided having essentially the same functions as the first and/or second switches in the first embodiment, except that the switches are operated automatically. For instance, a switch may be an acoustic impedance, infrared, or capacitive switch that detects proximity of the handset to the user's head and, if proximity to the user's head is detected, routes the call through the audio path in the handset regardless of whether the headset is plugged into the handset. In another embodiment, the switch is disposed on the headband of the headset and detects the tension on the headband (when it is stretched to be placed on the user's head) and selects the audio path in the headset responsive to such detection.

The Kim Reference

The Kim reference is the Office's primary reference in all the claim rejections. However, Kim does not teach that for which it has been cited.

For instance, with reference to claim 1, it is generally drawn to the above-described first embodiment of the invention, in which the switch, when operated, both initiates a call and routes the audio signals on a selected one of the first and second audio paths. The Office asserted that this feature is shown in Figures 5 and 7-8 and discussed and disclosed in column 3, lines 3-55 and column 4, lines 34-49 of Kim. However, that is not true. Kim discloses nothing more than the admitted prior art. Particularly, the portions of the specification cited by the Office simply disclosed a specific circuit for automatically routing the audio to the headset responsive to the headset being plugged into the handset. This is nothing more than the admitted prior art. There is no disclosure of a switch operable by the user that allows the user to select the audio path separately from the connection of the headset to the handset. As in the prior art, there is no single switch which both initiates or accepts a call and also selects between two possible audio paths. The first two embodiments disclosed in Kim in connection with Figures 2 through 6 merely disclose circuits for detecting whether or not the headset is plugged in and routing the audio to the headset when it is plugged in. The third and fourth embodiments disclosed in connection with Figures 7-9 have a first switch on the handset and a second switch on the headset, either of which can be operated to initiate a telephone call. Column 6, line 56, through column 7, line 13. However, it does not select the audio path. The audio path is still selected by the circuit for detecting whether the headset is plugged into the handset, as in the first two embodiments. Hence, Kim does not disclose the limitation of claim 1 of "a first switch ... configured such that operation thereof has the effect both of initiating and/or accepting a call, and of routing audio signals to a selected one of the first and second audio paths".

Accordingly, Claim 1 and its dependent claims 2-7 patentably distinguish over Kim.

Independent Claim 8 generally pertains to the second above-described embodiment in which a toggle switch is provided separate from the call initiation

switch. Again, this is not taught by Kim, which merely discloses (1) circuits for detecting whether the headset is plugged in and routing the audio to the headset if it is plugged in, just as in the admitted prior art, and (2) an extra switch on the for taking the phone "off-hook". These two teachings either taken individually or combined simply do not meet the limitations of Claim 8 of "a second switch manually operable independently of the act of connecting the headset to said handset; for toggling the audio path to a selected one of the first audio path and the second audio path".

Independent claim 9 pertains generally to the third above-described embodiment, in which a switch automatically detects use of the handset or headset.

As noted above, Kim discloses a circuit that determines merely whether the headset is connected to the handset, not a circuit for determining whether the headset is in use or not. Furthermore, the headset button 720 disclosed in connection with the embodiment of figures 7 and 8 is an nothing more than a second off-hook button. Accordingly, claim 9 distinguishes over the prior art of record because the prior art does not disclose "detecting means for detecting use of the headset or handset by the user and automatically enabling the respective first or second audio path responsive to the detection".

Dependent claims 10-13 recite specific embodiments of the detecting circuit, including a capacitance sensor, an infrared sensor, an acoustic impedance sensor, and a sensor for detecting tensioning of the headset headband. The Office rejected claims 10-13 over Kim in view of Van Schyndl. However, claims 10-13 distinguish over the prior art at least because they depend from claim 9, which distinguishes over Kim, and Van Schyndl does not provide the above-described teachings lacking from Kim.

Claim 14 has been cancelled.

Independent claim 15 is a method claim that distinguishes over the prior art for essentially the same reasons provided above in connection with independent apparatus claim 1. Particularly, claim 15 recites a first switch on the handset for "initiating a call and routing the call on the first audio path" as well as a second switch on the headset for "initiating a call and routing the call on the second audio

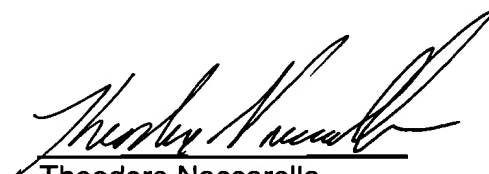
path". As discussed above in connection with claim 1, Kim does not disclose a switch that both initiates a call and selects the audio path for the call. In Kim, the audio path is selected by whether or not be headset is connected to the handset, which is a separate circuit from the circuit for initiating the call. Thus, Kim does not meet the limitation of claim 15 of "responsive to operation of the first switch, initiating or accepting a call and routing the call on the first audio path" or "responsive to operation of the second switch, initiating or accepting a call and routing the call on the second audio path".

Claims 16-24 depend from claim 15 and, therefore, distinguish over the prior art of record for at least the reasons given for claim 15, from which they depend.

In view of the foregoing amendments and remarks, this application is now in condition for allowance. Applicant respectfully requests the Examiner to issue a Notice of Allowance at the earliest possible date. The Examiner is invited to contact Applicant's undersigned counsel by telephone call in order to further the prosecution of this case in any way.

Respectfully submitted,

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